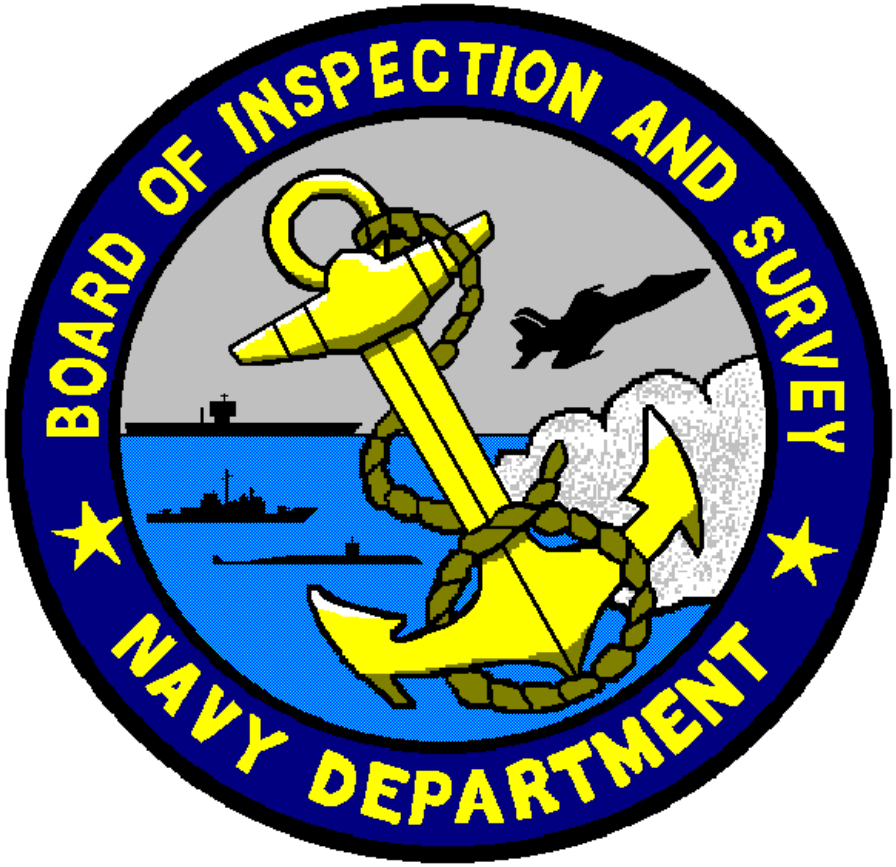

ENGINEERING CHECKS

MCM 1 CLASS (Rev 6)

AUXILIARIES (AX)
PRE-UNDERWAY PHASE
[MCM 1 CLASS MASTER CHECKLIST REV 3]

5811	ANCHOR WINDLASS
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual Support	NAVSEA/OEM TECH MANUAL
Inspect PMS Support	5811/007 5811/802
Inspect posted operating/safety instructions and lubrication data	NAVSEA/OEM TECH MANUAL
Test Operate Anchor Windlass with No-Load	5811/007 U-1 5811/802 R-35 NAVSEA/OEM TECH MANUAL
Inspect Fluid Samples	5811/007 18M-3
Inspect for proper HPU fluid levels	N/A
Inspect anchor windlass & lubrication	5811/007 S-1R, Q-2R 5811/802 R-34
Inspect handbrake is adjusted (recommend within 30 days of MI)	5811/009 A-1
Inspect electric brake (recommend within 30 days of MI)	NAVSEA/OEM TECH MANUAL 5811/007 A-2
Inspect brake linkage assembly	NAVSEA/OEM TECH MANUAL
Test wildcat/windlass solenoid switch	NAVSEA/OEM TECH MANUAL
Inspect Gauge Calibration	CRL
Inspect relief valve data is properly posted (if data is not posted, then ship must conduct relief valve test)	N/A
Inspect all flex hoses are properly tested and labeled	N/A
Inspect flange shields	N/A
Inspect for adequate nitrogen charge for windlass	N/A
Inspect speed limiter	N/A
Inspect for adequate LP air pressure for chain compressor	N/A
Inspect filter differential indications	N/A
Inspect HPU mechanical seal leakage	N/A
Inspect Servo/Replenishment pressures during wildcat operation	N/A
Inspect Chain Compressor operation	N/A
Inspect reduction gear lubrication (gauges/sight flows/dipsticks)	NAVSEA/OEM TECH MANUAL 5811/007 U-2
Test crossover valve operation	N/A

5600 / 5611	STEERING (Inport System Verification)
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual and EOSS Support	NAVSEA/OEM TECH MANUAL and EOSS
Inspect PMS Support	5600/013 5611/820
Inspect operating/safety instructions and hydraulic system/electrical wiring diagrams are posted	NAVSEA/OEM TECH MANUAL
Inspect fluid samples	5600/015 S-4R NSTM 262
Inspect static mechanical checks	5600/013 R-6 5611/820 R-2
Inspect relief valve test tags are within periodicity (if not, test compensator relief valve settings)	NAVSEA/OEM TECH MANUAL
Inspect flex hoses are properly tested/labeled	5000/009 A-1/A-2 5000/014 A-1/A-2 NAVSHIPYD PUGET SOUND 261925Z APR99
Inspect flange shields are properly installed	NSTM 505
Inspect steering gear lubrication	5600/013 R-7/8
Inspect trick wheel assembly	5600/013 R-6 NSTM 562
Test N2 accumulator charge	n/a
Inspect proper fluid levels	5600/013 R-6
Inspect filter indicators	5600/013 R-6
Inspect rudder ram finish	5600/013 R-6
Inspect rudder ram cylinders for leaks	5600/013 R-6, U-2
Inspect gauge calibration	CRL
Inspect rudder stock grounding straps and post lubrication	NAVSEA/OEM TECH MANUAL
Inspect servo/replenishment pressures are correct	NAVSEA/OEM TECH MANUAL
Test the rudder follow up error (1 deg increments at 0 to 5 deg; 5 deg increments at 5 to 25 deg)	NSTM 562 5611/820 R-2
Test the trick wheel stops	5600/013 R-6 NSTM 562
Inspect the crush block clearances	NSTM 562
Test (inport) rudder swing checks	5600/013 R-6 5611/820 R-2 NSTM 562
Test (inport) blocking valve	NSTM 562
Test auxiliary emergency steering pump	5611/820 R-2
Test manual emergency steering system	5611/013 S-2 5611/820 R-2
Test steering casualty alarm	EOSS
Test pump remote operation and transfer of controls to pilot house	EOSS
Test for static rudder split (pilot house in control)	NSTM 562
Test for indicator error (pilot house in control)	NSTM 562

5210	FIRE PUMPS (ELECTRIC and STEAM)
Component/Sub-Component	Proposed Procedure
ALL FIRE PUMPS	
Inspect Tech Manual / EOSS support	EOSS NAVSEA/OEM TECH MANUAL
Inspect PMS support	5210/806 5210/010
Inspect gauge calibration	CRL
Inspect transducer calibration	CRL
Inspect pump, motor (casing, packing/mechanical seal, coupling, etc.)	5210/806 R-3/10/24/30/33 NSTM 503
Inspect coupling guard	5210/806 R-3/33 OPNAVINST 5100.19
Inspect foundation	5210/806 R-3/33 NSTM 503
Inspect ferrous fasteners	5210/806 R-3/33 NSTM 075, 505
Inspect resilient mounts	5210/806 R-3/10/24/30/33 5210/011 U-1/2 NSTM 503 NAVSEA S9073-A2-HBK-010
Inspect grounding straps	5210/806 R-3/33 NSTM 300
Inspect piping & supports	5210/806 R-10/24/30 NSTM 505
Inspect all flex hoses are properly tested/labeled	5000/009 A-1/A-2 5000/014 A-1/A-2 NAVSHIPYD PUGET SOUND 261925Z APR99
Inspect piping lagging	5210/806 R-10/30 NSTM 505, 635
Inspect the suction strainer	EOSS NAVSEA/OEM TECH MANUAL
Test remote motor/hydraulic operated suction/discharge valves, interlocks Inspect local valves and remote control station (labeling, position indicators, etc) Inspect MHVC station oil level and relief valve test periodicity	EOSS 5210/806 R-10/24/30 5210/010 S-2/3 5000/005 S-4, A-3 5000/006 2M-1, 36M-4
Test remote start/stop functions	EOSS
Test local start/stop functions	EOSS
Inspect pump operation (design discharge pressure, gages, unusual noise, bearing temps, etc).	EOSS NAVSEA/OEM TECH MANUAL
Inspect for proper seating of check valve and no reverse rotation upon securing pump	EOSS NAVSEA/OEM TECH MANUAL
STEAM DRIVEN FIRE PUMPS	
Inspect lube oil filter indications and oil level	N/A
Test the over speed trip	N/A
Test the speed limiting governor	N/A
Test the turbine auxiliary lube oil pump low-pressure automatic start switch operation	N/A
Test combination exhaust and relief valve	N/A

5240	SEAWATER SERVICE PUMPS
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual / EOSS support	NAVSEA/OEM TECH MANUAL EOSS
Inspect PMS support	5240/008
Inspect gauge calibration	CRL
Inspect transducer calibration	CRL
Inspect coupling guard	OPNAVINST 5100.17
Test remote start/stop functions	EOSS
Test local start/stop functions	EOSS
Inspect pump operation/design discharge pressure, unusual noise, bearing temps, etc.	EOSS NSTM 503 NAVSEA/OEM Tech Manual
Inspect packing and mechanical seal leakage	NSTM 503
Inspect for proper seating of check valve and no reverse rotation upon securing the pump	EOSS NAVSEA/OEM Tech Manual
Inspect for ferrous fasteners	NSTM 075 NSTM 505-3.1.1
Inspect foundation and resilient mounts	NAVSEA S9073-A2-HBK-010
Inspect condition of expansion joints	NSTM 505
Inspect all flex hoses are properly tested/labeled	5000/009 A-1/2 5000/014 A-1/2 NAVSHIPYD PUGET SOUND 261925Z APR99
Inspect piping lagging	NSTM 505
Inspect grounding straps	NSTM 300 NSTM 503
Test remote motor/hydraulic operated suction/discharge valves, interlocks Inspect local valves and remote control station (labeling, position indicators, etc) Inspect MHVC station oil level and relief valve test periodicity	EOSS 5000/005 S-5, A-3 5000/006 2M-1, 36M-4
Inspect the suction strainer	5240/007 Q-2, S-2 NSTM 503
Test aux seawater low pressure alarm, start-up switch	5240/008 A-2
Inspect firemain to seawater reducing station operation	EOSS

5512 / 5513 / 5515	LOW and MEDIUM PRESSURE AIR SYSTEM
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual and EOSS Support	
Inspect PMS Support	
Inspect Gauge Calibration	
Inspect operating/safety instructions are posted	
Inspect compressor oil level and oil samples	
Test compressor pressures and temperatures	
Test compressor capacity control system	
Inspect compressor belt condition	
Test compressor auto control and safety switches	
a. Operational control switches (115/120/125)	
b. Low oil pressure	
c. High discharge pressure	
d. High air and water temp	
Inspect all relief valve testing is within periodicity	
Inspect location of intake/vent supply	
Inspect receiver flask certification	
Test priority valve operation	
Inspect sea water cooling system	
Inspect 50/50 mixture of ethylene glycol	
Test type I and type II dehydrator operation	
a. Gauge calibration	
b. Tower operation	
c. Purge air pressure	
d. Automatic drain operation	
e. Dew point	
f. Inspect PMS and Tech Manual support	

5511 / 5515	HIGH PRESSURE AIR SYSTEM
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual and EOSS Support	
Inspect PMS Support	
Inspect Gauge Calibration	
Inspect operating/safety instructions are posted	
Inspect compressor oil level and oil samples	
Test compressor auto control and safety switches	
a. Start / Stop switch	
b. Low oil pressure switch	
c. Jacket water temp switch	
d. Compressor temp/pressure monitor operation	
Inspect compressor pressures and temperatures	
Inspect compressor drive belt condition	

Inspect condensate monitoring/drain system	
Inspect all flex hoses are properly tested/labeled	
Inspect all relief valve testing is within periodicity	
Inspect HP air flask certification	
Inspect sea water cooling system	
Inspect air intake/ventilation supply location	
Inspect all HP/LP air reducing stations	
Inspect fresh water pump belts	
Inspect capacity	
Inspect oil wipers	
Inspect pressure regulator valve	
Inspect 50/50 mixture of ethylene glycol	
Inspect seals for oil leaks	

A-002/105-11	EMERGENCY/SHIP'S SERVICE DIESEL GENERATORS
Component/Sub-Component	Proposed Procedure
Note: Overspeed trip is not required if DEI has conducted within the last ninety days and documentation of satisfactory performance is available.	Note: Dead Bus Pick-up & Reverse Power Relay checks are covered under EL.
Inspect Engine Sump Level	EOSS
Inspect Turbocharger Sump Level	EOSS
Inspect Start Air Lubricator Oil Level	EOSS
Inspect Governor Oil Level	EOSS
Inspect Lube Oil Sample	3112/007 R-30D
Inspect J/W Expansion Tank Level	EOSS
Inspect "Do not open access…" and Expansion Tank warning "Poison…" are posted	NAVSEA/OEM TECH MANUAL
Inspect/test fuel valve trip	3421/002 Q-2
Inspect Relief Valves	3421/002 A-1
Inspect Flange Shielding	NSTM 505
Inspect For Exhaust Leaks	EOSS
Inspect Filters, Strainers	3421/002 R-2,R-7
Inspect Governor and Fuel Linkage for Binding	EOSS
Inspect J/W Standby Pump	EOSS
Test Blow In Damper	3421/002 S-7
Test pre-lube system operation	EOSS
Test Jacket Water High Temp Alarm	3112/007 A-12
Test Lube Oil Filter High DP Alarm	NAVSEA/OEM TECH MANUAL
Test low lube oil pressure alarm	3112/007 S-14
Test Remote Shut Down	3112/007 S-15
Test Local Shut Down	EOSS
Test Barring Device Interlock	EOSS
Test Engine Blow Down	EOSS
Test Local Pneumatic start	EOSS
Test dead bus auto start	3112/007 A-15R
Test Overspeed Trip	3112/007 24M-10R
Test 80% load for 15 minutes	N/A
Inspect for fuel/lube oil leaks	EOSS
Inspect pyrometer operation	3112/007 A-15R
Inspect manometer	3112/007 A-15R
Inspect sea water cooling pump	EOSS
Test high water/generator bearing temp alarm	

5140	AIR CONDITIONING PLANTS
Component/Sub-Component	Proposed Procedure
CENTRIFUGAL UNITS (R-114, R-236fa) **RECIPROCATING UNITS (R-12, R-134a)** **(check items below as applicable)**	
Note: Some units are not equipped with isolation valves for pressure testing. Transferring a large amount of refrigerant would be required to test and is not advisable. For these installations, switch operation will be accomplished by operational means (e.g., securing/aligning s/w, turning the aux lube oil pump on/off, turning the c/w pump on/off).	Note: Applicable MRCs are used as guides to demonstrate a particular component's performance. Some MRCs may not be accomplished in their entirety.
Inspect Tech Manual / EOSS support	NSTM 516 NAVSEA/OEM Tech Manual S9514-DU-MMA-010, ACCW
Inspect PMS support	5140/010 (R-12) 5140/012 (R-134a) 5140/805 (R-12 & R-134a)
Inspect operating/safety instructions are posted	GSO507C, 516, 602 OPNAVINST 5100.19 NAVSEA/OEM Tech Manual
Inspect refrigerant logs	5140/010 M-4R 5140/012 M-4R
Inspect material condition	5140/805 R-2
Inspect compressor oil level, oil sample	5140/010 R-9D 5140/012 R-9D EOSS
Inspect moisture indicators	5140/010 W-1R 5140/012 W-1R
Inspect hermetic motor sight glass	N/A
Inspect gauge calibration	CRL
Verify calibration & operation of high pressure switch (236fa)	N/A
Verify calibration & operation of pressure transducers (236fa)	N/A
Inspect oil accumulator pressure (236fa)	N/A
Test safety/control pressure switch device settings and operation High pressure safety/control switch Low pressure safety/control switch Water pressure failure safety switch Oil failure/low oil pressure/differential oil pressure switch Oil temperature safety switch Compressor low pressure control switch Chill water pressure/differential flow switch Low refrigerant temp switch Chill water operating/low temp switch Thermostatic Expansion Valve (TXV)	5140/805 R-5 5140/010 R-4 5140/012 R-4 VARIOUS PLC DISPLAYS * SEE SHIPS PROCEDURES LISTED AT END OF TABLE
Inspect/test for system leaks (refrigerant/oil/water)	5140/805 R-2/8 5140/010 S-1R, R-7 5140/012 S-1R, R-7 NSTM 516 Sec. 3
Inspect for compressor shaft seal leaks	NSTM 516-3.2.24.1 (<1drop/5min)

Inspect coupling guard	OPNAVINST 5100.19 NAVSEA/OEM Tech Manual Ships procedure – ensure coupling is tight and not cracked
Operate/test unit, verify operating parameters, Test capacity control system operation (pressure, temperature) Test current limiter, electronic control module (as applicable) Verify operation of Pre-Rotational Vanes (PRV) & Hot Gas By-Pass Valve (HGBP) (centrifugal units) Inspect capacity control external pneumatic vent connection for proper venting (applies only to Carrier compressors equipped with hydraulic cap control) Test Water Regulating Valve (WRV)	5140/805 R-6/7/9/10 5140/010 A-1/5/7/8 5140/012 A-1/5/7/8 EOSS NAVSEA/OEM Tech Manual
Test compressor suction and discharge valves (reciprocating units)	5140/805 R-5 5140/010 R-5 5140/012 R-5

Inspect/test chill water pump Bearing lubrication Operating parameters Mechanical seal leakage Pump discharge check valve seat tightness Coupling guard	NSTM 503, GSO 503 (5 dops/min) EOSS NAVSEA/OEM Tech Manual OPNAVINSTR 5100.19 Disch Check Valve – Ship procedure: stop pump, verify shaft stopped & did not rotate backwards (windmill). Ensure other pumps in the system are operating when conducting test.
Inspect Chill Water Expansion Tank Operating level Filling air gap Hose connection warning sign Relief valves and vacuum breakers	5140/010 24M-1 5140/012 24M-1 NSTM 516, 533 NSTM 532B (2 supply pipe diameters) GSO 602 EOSS
Inspect sea water system & controls Operate emergency cooling water reducing station Reducing valve and station pilot valve sensing line strainer Seawater regulating valve Condenser (O&I as required) Zinc anodes (O&I as required) Headers, tube sheet, divider plate (O&I as required) Strainers (Hellan, Y, Duplex) (O&I as required)	5140/805 R-2/4/8 5140/010 Q-1R, Q-2R, S-2R, A-3R, R-1/2/8D/12 5140/012 Q-1R, Q-2R, S-2R, A-3R, R-1/2/8D/12 5000/015 (A or R checks as applicable to installation) NSTM 516 EOSS NAVSEA/OEM Tech Manual

Inspect/test sea water pump (as applicable) Operating parameters Bearing lubrication Mechanical seal leakage Pump discharge check valve seat tightness Coupling guard	NSTM 503, GSO 503 EOSS NAVSEA/OEM Tech Manual OPNAVINSTR 5100.19
Inspect resilient mounts	5140/010 A-4R 5140/012 A-4R NAVSEA S9073-A2-HBK-010
Inspect grounding straps	NSTM 300
Inspect flexible hoses	5140/010 A-6 5140/012 A-6 5000/009 A-1/2 5000/014 A-1/2
Inspect vent exhaust ducting terminal (flow, location, indicators and alarms)	NSTM 516 Sec 4
Inspect cylinder stowage racks	NSTM 516 GSO 516, 671
Inspect replacement refrigerant charge	GSO 516 Full operating charge in all units plus complete replacement charge for 1 condensing unit
Inspect lube oil filter/strainer (O&I as required)	5140/010 R-6 5140/012 R-6
Inspect dehydrator (O&I as required)	5140/010 A-2R, R-3 5140/012 A-2R, R-3

Inspect/test refrigerant Purge and Pump Out (PPO) unit/Refrigerant Recovery Unit (RRO) Moisture indicator Oil level Belt drive & belt guard (tension & condition) Compressor cycling (high pressure) switch Material condition (O& I as required) Dehydrator cartridge (O&I as required)	A/C& R Advisory #32 5140/010 A-2R, R-4 5140/012 A-2, R-4 NAVSEA/OEM Tech Manual
Verify halocarbon monitor installation is compatible with refrigerant type. Test halocarbon monitor	NSTM 516 OPNAVINST 5100.19 GSO 516
Inspect for non-condensable gases (as required by when compressor discharge pressure cannot be maintained with WRV)	NSTM 516

- ?? High Press Switch – PLC 4444
- ?? Low Press Switch – PLC C/W TEMP
- ?? Oil Press Switch – Stop C/W pump, pressure or flow A/C should be secure. PLC 7777 stopped C/W pump. PLC 9999 loss C/W flow.
- ?? Seawater Failure Switch – PLC 3333
- ?? Low Water Temp Control Switch – PLC 5555
- ?? Operating Temp Control Switch (R-12) – T/M Table 3-1: lower operating temp control switch sensor to 37+/- 1 Deg F with low temp calibrator. Plant should pump down open LP switch and stop compressor.
- ?? PLC Operating Temp Control Feature (R-134a) – T/M para 3-15: lower C/W sensor temp to 39 Deg F with a low temp calibrator. Plant should pump down open LP switch and stop compressor (PLC 39).
- ?? High Oil Temp (R-134a) – T/M para 3-15: raise oil temp sensor to 160 Deg F with a low temp

calibrator. Plant should pump down open LP switch and stop compressor (PLC 2222).

5161	REFRIGERATION PLANTS
Components/Sub-Components	Proposed Procedure
Inspect Tech Manual / EOSS support	NSTM 516 NAVSEA/OEM Tech Manual S9516-AZ-MMA-010
Inspect PMS support	5161/001 (R-12) 5161/005 (R-134a) 5161/800 (R-12 & R-134a)
Inspect operating/safety instructions are posted	GSO 516, 602 OPNAVINST 5100.19 NAVSEA/OEM Tech Manual
Inspect refrigerant logs	5161/001 M-2R 5161/005 M-2R
Inspect compressor oil level, oil sample	5161/001 R-12D 5161/005 R-12D EOP NAVSEA/OEM Tech Manual
Inspect moisture indicators	5161/001 W-1R 5161/005 W-1R
Inspect capacity control external pneumatic vent connection for proper venting (applies only to Carrier compressors equipped with hydraulic cap control)	NSTM 516 NAVSEA/OEM Tech Manual T/M para 6-18.6
Inspect prerotational vane operation and controls	NSTM 516 NAVSEA/OEM Tech Manual
Inspect gauge calibration	CRL
Test safety/control pressure switch device settings and operation High pressure safety/control switch Low pressure safety/control switch Water pressure failure safety switch Oil failure/low oil pressure/differential oil pressure switch Compressor low pressure control switch Chill water pressure/differential flow switch Low refrigerant temp switch Chill water operating/low temp switch Thermostatic Expansion Valve (TXV)	5161/800 R-4 5161/001 18M-2, 18M-4, U-3/4 5161/005 18M-2, 18M-4, U-3/4 NSTM 516 NAVSEA/OEM Tech Manual
Inspect/test for system leaks (refrigerant/oil/water)	5161/800 R-5 5161/001 S-1R 5161/005 S-1R NSTM 516 Sec. 3
Inspect for compressor shaft seal leaks	NSTM 516-3.2.24.1 (<1drop/5min)
Inspect coupling guard	OPNAVINST 5100.19 NAVSEA/OEM Tech Manual
Inspect drive belts and belt guards	5161/800 R-5 5161/001 18M-1 5161/005 18M-1
Operate/test unit, verify operating parameters, and verify capacity control system operation	5161/800 R-6 5161/001 18M-2 5161/005 18M-2 EOP NAVSEA/OEM Tech Manual
Test compressor suction and discharge valves	5161/800 R-4 5161/001 U-1 5161/005 U-1

Test/verify evaporator pressure regulator (EPR) and water regulating valve (WRV) setting and operation	5161/800 R-6
Inspect for non-condensable gases (as required by when compressor discharge pressure cannot be maintained with WRV)	5161/001 Q-5R 5161/005 Q-5R
Test/verify refrigeration room door safety device, inspect door seals	5161/001 S-4R 5161/005 S-4R
Inspect gravity type cooling coils for excessive frost build-up	NSTM 516 Sec 4
Inspect drip trough heating coils/cables and indicator lights	NSTM 516 Sec 4
Inspect refrigerator room recirculating fans and indicator light, verify damper operation	GSO 516 NSTM 516 Sec 4
Inspect sea water system Condenser Zinc anodes (O&I as required) Headers, tube sheet, divider plate (O&I as required) Operate emergency cooling water reducing station Strainers (Hellan, Y, Duplex) (O&I as required) Reducing valve and station pilot valve sensing line strainer	5161/800 R-3 5161/001 S-3R, Q-4R, R-13D 5161/005 S-3R, Q-4R, R-13D 5000/015 (A or R checks as applicable to installation) NSTM 516 EOSS NAVSEA/OEM Tech Manual
Inspect resilient mounts	NAVSEA S9073-A2-HBK-010
Inspect grounding straps	NSTM 300
Inspect flexible hoses	5161/001 A-7/8/10/11 5161/005 A-7/8/10/11 5000/009 A-1/2 5000/014 A-1/2

Inspect vent exhaust ducting terminal (flow, location, indicators and alarms)	NSTM 516 Sec 4 (9” off deck)
Inspect cylinder stowage racks	NSTM 516 GSO 516, 671
Inspect replacement refrigerant charge	GSO 516 Full operating charge for all units plus complete replacement charge for 1 condensing unit
Inspect liquid line strainers and filters (O&I as required)	5161/001 R-8 5161/005 R-2, R-8
Inspect dehydrator (O&I as required)	5161/001 A-2R 5161/005 A-2R
Inspect refrigerant recovery unit and vacuum pump	NAVSEA/OEM Tech Manual
Verify halocarbon monitor installation is compatible with refrigerant type Test halocarbon monitor	NSTM 516 OPNAVINST 5100.19 GSO 516

5331	POTABLE WATER PUMPS
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual / EOSS Support	EOSS NAVSEA/OEM Tech Manual
Inspect PMS Support	5331/005 5331/800
Inspect Gauge Calibration	CRL
Inspect Transducer Calibration	CRL
Inspect Coupling Guard	OPNAVINST 5100.19 NAVSEA/OEM Tech Manual
Test local & remote start/stop functions of potable water pump and priming pump	EOSS 5331/800 R-2/3
Inspect potable water pump and priming pump operation/design discharge pressure, unusual noise, bearing temps, etc.	EOSS 5331/800 R-2/3 NSTM 503 NAVSEA/OEM Tech Manual
Inspect reduced pressure, vacuum breaker and double check valve backflow preventer	5331/800 R-4/5/6
Inspect packing/mechanical seal leakage	NSTM 503
Inspect for dissimilar metals (fasteners & piping)	NSTM 075
Inspect foundation and resilient mounts	5331/800 R-2 NAVSEA S9073-A2-HBK-010 NSTM 300, 504
Inspect all flex hoses are properly tested/labeled	5000/009 A-1/2 5000/014 A-1/2 NAVSHIPYD PUGET SOUND 261925Z APR99
Inspect grounding straps	NSTM 300
Test potable water pump pressure switch	N/A

5331	WATER HEATERS
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual and EOSS Support	NAVSEA/OEM TECH MANUAL
Inspect PMS Support	5331/005
Inspect gauge calibration	CRL
Inspect relief valve test data	5331/005 60M-1
Inspect relief valve drain piping	NAVSEA/OEM TECH MANUAL
Inspect cold water inlet pipe for check valve	NAVSEA/OEM TECH MANUAL
Test safety thermostatic switch	5331/005 A-5/6
Test over-temp safety device	5331/005 A-5/6
Inspect lagging condition	NSTM 505
Inspect for steam / water leaks	NSTM 505
Inspect Temp Reg Valve for locking device	NAVSEA/OEM TECH MANUAL
Inspect heater foundation	NAVSEA/OEM TECH MANUAL
Test water temp at basin/spigot	NSTM 533

6641	FAN ROOMS
Component/Sub-Component	Proposed Procedure
Inspect deck condition	GSO 509, 512, 528, 670
- No standing water	GSO 509, 512, 528, 670
- Deck rusted / exfoliated	GSO 509, 512, 528, 670
- Deck drain not installed	GSO 509, 512, 528, 670
- Deck drain missing, not secured within deck socket or inoperative	GSO 509, 512, 528, 670
Inspect deck/bulkheads have no painted over rust	GSO 509, 512, 528, 670
Inspect lighting is operative and covers installed	GSO 509, 512, 528, 670
Inspect adequate lighting present in space	GSO 509, 512, 528, 670
Inspect vent duct condition	GSO 509, 512, 528, 670
- Access covers present	GSO 509, 512, 528, 670
- Access cover fasteners not rusted/missing	GSO 509, 512, 528, 670
- Duct interior is clean	GSO 509, 512, 528, 670
Inspect correct vent/piping system labeling	GSO 509, 512, 528, 670
Inspect fan motor installed correctly (flow)	GSO 509, 512, 528, 670
Inspect filters are clean and can be easily removed	GSO 509, 512, 528, 670
Inspect filter DP gauge is operative	GSO 509, 512, 528, 670
Inspect vent heating element is operative and not deteriorated	GSO 509, 512, 528, 670
Inspect cooling coils are clean	GSO 509, 512, 528, 670
Inspect thermostatic controls are calibrated, connected and operational	GSO 509, 512, 528, 670
Inspect the cooling coil drain is piped to the deck drain and is not clogged	GSO 509, 512, 528, 670
Inspect the proper color coding of piping	GSO 509, 512, 528, 670
Inspect that all hand wheels are present	GSO 509, 512, 528, 670
Inspect for damaged / missing lagging	GSO 509, 512, 528, 670
Test the C/W or steam solenoids are operational	GSO 509, 512, 528, 670
Inspect for chilled water / steam leaks	GSO 509, 512, 528, 670
Inspect for bull’s eye and CCOL in space	GSO 509, 512, 528, 670
Inspect for any unauthorized stowed material	GSO 509, 512, 528, 670
Inspect for any unauthorized flammables	GSO 509, 512, 528, 670
Inspect the filter cleaning shop	GSO 509, 512, 528, 670

5681	BOW THRUSTER
Component/Sub-Component	Proposed Procedure
Inspect Tech Manual Support	NAVSEA/OEM TECH MANUAL
Inspect PMS Support	5681/004
Inspect gauge calibration	CRL
Inspect posted operating/safety instructions and lubrication data	NAVSEA/OEM TECH MANUAL
Inspect fluid samples	5681/004 S-3R NSTM 262
Inspect for proper hydraulic oil levels (hydraulic power system, speed decreaser gearcase, gravity head tank)	EOSS

Inspect hydraulic oil filters	5681/004 R-1 NAVSEA/OEM TECH MANUAL
Inspect lubrication of components (cable sheave, dust boot, flex coupling, drive motor upper & lower thrust bearing, jet pump thrust bearings, flex coupling, rotary pump motor bearings, radial load bearings)	5681/004 A-4/5/7
Inspect right angle drive unit	N/A
Inspect drive shaft clutch assembly	N/A
Inspect flex hoses	N/A
Inspect bow thruster system	NAVSEA/OEM TECH MANUAL 5681/004 A-2
Test hydraulic system pressure switch	N/A
Test hydraulic system relief valve	5681/004 U-1
Inspect bow thruster shaft sealing systems	NAVSEA/OEM TECH MANUAL
Test bow thruster interlocks	N/A
Test bow thruster operation	5681/004 R-4W
Review latest underwater hull inspection report for external conditions (bow thruster tunnel zinc anodes, marine fouling, etc.)	U/W HULL INSPECTION REPORT DOCKING REPORT

AUXILIARIES (AX)
UNDERWAY DEMO PHASE
[MCM 1 CLASS MASTER CHECKLIST REV 3]

5811	ANCHOR WINDLASS DROP AND RETRIEVAL DEMONSTRATION
Component/Sub-Component	Proposed Procedure
Test Operate Anchor Windlass with Load	5811/007 U-1 5811/802 R-36
Test Mechanical Handbrake	5811/007 U-1 5811/802 R-36
Inspect Servo/Replenishment and Main Relief Pressures during wildcat operation	N/A
Inspect Anchor drops from the hawsepipe	5811/007 U-1 5811/802 R-36
Test Magnetic brake	5811/007 U-1 5811/802 R-36
Inspect motor amperage readings	NAVSEA/OEM TECH MANUAL

5600 / 5611	STEERING DEMONSTRATION
Component/Sub-Component	Proposed Procedure
Inspect proper fluid levels	5600/013 R-6 NAVSEA/OEM TECH MANUAL
Inspect correct Servo/Replenishment pressures	NAVSEA/OEM TECH MANUAL
Test - Demonstrate timed rudder swing checks/ blocking valve test Ahead (as per provided procedure)	5600/013 R-6 5611/820 R-2
Test - Demonstrate timed rudder swing checks/ blocking valve test Astern (as per provided procedure)	5600/013 R-6 5611/820 R-2
Inspect for dynamic rudder split from helm indicator	NSTM 562

5315	WATER PRODUCTION DEMONSTRATION – REVERSE OSMOSIS
Component/Sub-Component	Proposed Procedure
Note: Pre-U/W - AX to verify distillers are operational, calibration & safety relief valves are within periodicity. Detailed material inspections are normally conducted during u/w water production.	Note: Pre-U/W - EL will inspect salinity panel & dump valves.
Inspect Tech Manual Support	NAVSEA/OEM TECHMAN
Inspect PMS Support	5315/006 5315/007
Inspect relief valves are within periodicity	NAVSEA/OEM TECHMAN 5315/006 36M-1
Inspect HP pump oil level	5315/006 R-6D 5315/007 R-1D
Inspect flexible hose condition and test tag	NSTM 505
Inspect Accumulator Pressure	NAVSEA/OEM TECHMAN 5315/006 R-2
Test the operation of the product and brine flowmeters	NAVSEA/OEM TECHMAN
Test - Demonstrate water production capability during the 4 Hour Water Production Demonstration	NAVSEA/OEM TECHMAN
- Inspect RO to ensure the unit has not been set to produce above maximum recommended capacity (discharge pressure setting, production and sea water injection temperature diagram curve and tables)	NAVSEA/OEM TECHMAN
- Inspect the operating panel for alarm / unusual conditions.	NAVSEA/OEM TECHMAN
- Inspect 3 and 20 micron filter differential pressure	5315/006 R-1 5315/007 R-2
- Inspect all fittings and connections for leaks	NSTM 505

- Inspect demineralizer operation	NAVSEA/OEM TECHMAN 5315/007 R-3
Inspect freshwater flush	5315/006 M-2R 5315/007 M-2R

5311	WATER PRODUCTION DEMONSTRATION – HEAT RECOVERY EVAPS
Component/Sub-Component	Proposed Procedure
Note: Pre-U/W - AX to verify distillers are operational, calibration & safety relief valves are within periodicity. Detailed material inspections are normally conducted during u/w water production.	Note: Pre-U/W - EL will inspect salinity panel & dump valves.
Inspect PMS and Tech Manual support	5313/001 5313/800
Inspect gauge calibration	CRL 5313/800 R-2
Test flow meter	NAVSEA/OEM TECHMAN
Inspect evaporator shell (sight glasses, diffuser cap and scale buildup)	5313/800 R-2
Test interlock device between potable water and feed water valves	NAVSEA/OEM TECHMAN
Inspect feed pump (labeled, packing gland, foundation, seal / gland cavity)	5313/800 R-2
Inspect brine pump (labeled, packing gland, foundation, seal / gland cavity)	5313/800 R-2
Inspect distillate pump (labeled, packing gland, foundation, seal / gland cavity)	5313/800 R-2
Inspect brine pump (labeled, packing gland, foundation, seal / gland cavity)	5313/800 R-2
Inspect heater drain pump (labeled, packing gland, foundation, seal / gland cavity)	5313/800 R-2
Inspect flexible hose condition and test tag	NSTM 505
Inspect feedwater strainer (foundation and basket)	5313/001 Q-2R 5313/800 R-2
Inspect pipe labeling and lagging condition	NSTM 505/635
Test - Demonstrate water production capability during the 4 Hour Water Production Demonstration	NAVSEA/OEM TECHMAN

ELECTRICAL (EL)
PRE-UNDERWAY PHASE
MCM 1

3112	SHIPS SERVICE DIESEL GENERATORS
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test Reverse Power Relays	S-2R
Test Manual Load Shedding	TECHNICAL MANUAL
Test Parallel Operation (Auto)	EOP

	400 HERTZ MOTOR GENERATOR SETS
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test Split and Parallel Operation	IAW EOP / CSOSS

4221	TELL-TALE PANEL/NAVIGATION SIGNAL LIGHT PANEL
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test navigational lighting panel.	R-2
Measure Insulation Resistance Of Signal light panel.	R-4
Measure insulation resistance of electrical circuits	R-4

4331	ANNOUNCING SYSTEMS
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test General, Chemical, and Collision Alarms from all stations	R-1
Test 1MC from all stations	R-1
Measure speaker group insulation resistance	A-1
Test General Announcing System Oscillators/Amplifier (BOTH)	R-1

4751	DEGAUSSING SYSTEM
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Conduct Operational Test	Q-2R
Conduct Ground Test	S-2
Inspect Degaussing Folder	NAVSEA TECH MANUAL

3202	AUTOMATIC BUS TRANSFER EQUIPMENT
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test all Engineering ABT’s.	R-3
Test All remaining ABTs. (Day 2)	Q-1

4371	SALINITY INDICATING SYSTEM
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test dump valve operation	REFER TO SCHEDULING AIDS
Test alarm settings	REFER TO SCHEDULING AIDS

4373	WIND INDICATING SYSTEMS

COMPONENT/SYSTEM		PROPOSED PROCEDURE
Test system for proper operation		R-1M
5081	**THERMAL IMAGING SURVEY**	
COMPONENT/SYSTEM		**PROPOSED PROCEDURE**
Commence Thermal Imaging Throughout The Ship **NOTE**: Any equipment surveyed that has a temperature rise of 40 degrees centigrade or above (3 or 4 star) must be repaired or tagged out prior to getting underway. The items will not be available until repairs are completed and re-shot for verification		R-2

ELECTRICAL (EL)
UNDERWAY PHASE

NOTE: Electrical Underway Checks Consist Mainly Of Space Walk-Through Throughout The Ship.

In each space inspect the following if applicable:

(INSPECT) FUSE BOXES

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Are fuses pulled from designated circuits without danger tags affixed?	NSTM 300 - 2.4.1
Are there loose or missing locking nuts or gear adrift?	NSTM 300 – 4.8.2.1
Are circuits properly labeled for easy identification?	GSO 305E
Are there any bent, twisted, misaligned, or broken fuse clips?	NSTM 300 – 4.8.2.1
Is the interior rusty or dirty?	NSTM 300 – 4.8.2
Are fuses of the correct amperage and voltage installed?	GSO 303F NSTM 320 – 1.7.4
Are circuits fed from one set of fuses (except battle lantern circuits) multiple?	GSO 331C
Are fuse clips phosphor-bronze instead of silver plated?	NSTM 300 – 4.8.1.2
Were door hinges broken?	5100.19 SERIES NSTM 300 – 2.1.4
Are non-silver ferruled fuses installed?	NSTM 300 - 2.5.4
Are circuits over fused?	NSTM 300 – 2.5.4
Is clearance provided to permit complete accessibility for maintenance, repair, renewal of fuses, and testing?	GS0 300D

(INSPECT) BATTLE LANTERNS

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were relay-operated lanterns installed in sufficient number?	NSTM 330 – 1.6.4.3.3.1
Are lanterns installed with suitable bracket assemblies to prevent removal of lantern?	NAVSEA 0964-000-2000
Were lanterns inoperative?	NSTM 330 – 3.6.2
Were test switches and relay frames grounded?	NSTM 330 – 2.1.8
Were lanterns located in explosion proof enclosures (prohibit)?	NSTM 330 – 1.6.4.3.2.2
Were NEALS lanterns installed and were they charged (red indicator)?	NSTM 330 – 1.6.4.3.2
Were relay operated lanterns fused?	NSTM 330 – 1.6.4.3.3.3

(INSPECT / TEST) SHORE POWER SYSTEM

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Is shore power being properly rigged?	NSTM 320 – 2.2.7
Did shore power shunt trip interlocks trip its associated breakers when tested?	IAW PMS IAW EOSS GSO 320D
Was shore power system cabling between the receptacles and the ship's switchboard insulation resistance within EOSS or PMS limits?	NSTM 320 – 2.2.7.2 IAW EOSS IAW PMS NSTM 300
Were shore power indicating lights operative, white in color, and all screws installed?	NSTM 320 – 2.2.9
Were warning signs posted?	GSO 070H
Was there pigtail stowage installed?	GSO 320D

Does the shore power system meet the current standards: - **Have a Viking Connector System.** - **Have AQB-LF 400 Amp Circuit Breaker with shunt trip.** - Have phase sequencing and phase orientation devices. - Have power available lights at switchboard and shore power connection box. Have installed ammeter and selector switch to monitor total shore power current.	GSO 320D

(INSPECT) CATHODIC PROTECTION SYSTEM	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Was the installed Cathodic Protection System operative and adjusted IAW PMS?	GSO 633C IAW PMS
Were the rudder grounding straps made of 1-1/2 inch Wide braided copper and brazed to the rudder stock and the hull?	NSTM 633 – 3.3.2.7 GSO 633C

(INSPECT) CATHODIC PROTECTION SYSTEM	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Has the system been turned off for greater that 15 days?	GSO 633G
Were shaft grounding brushes correctly installed?	NSTM 633 – 3.3.2.6 ICCP TECH MANUAL
Shaft grounding brushes exhibit full contact with the slip ring?	NSTM 633 – 3.3.2.6 ICCP TECH MANUAL
Was brush rigging correctly installed?	NSTM 633 – 3.3.2.6

(INSPECT / TEST) ALARM SYSTEMS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Test alarm switchboards and panels.	IAW PMS
Were any alarm and warning systems inoperative or missing parts?	GSO 433J

(INSPECT) ORDER/INDICATING/METERING SYSTEMS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were Tank Level Indicators (TLI's) out of calibration or inoperative?	GSO 437 E
Were valve position indicator circuits misadjusted or inoperative?	GSO 430H
Were there missing or inoperative salinity cells?	GSO 531B IAW PMS

MOTOR CONTROLLERS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were interiors dirty, rusty, deteriorated, or contained gear adrift?	NSTM 300-5.2.4 NSTM 302-3.3.2
Were wiring diagrams, schematics or overload heater tables missing?	NSTM 302-3.3.1 GSO 302F
Was controller electrical wiring properly banded?	ELECT PLT. INST. STD METHODS/GSO 302F
Were Start, Stop, "Emergency Run" or Reset buttons seized, missing or inoperative?	EQUIPMENT TECH MANUAL AND DRAWINGS
Were rubber boots cracked, torn or missing?	NSTM 300-3.2.2
Were overload relay heaters properly sized and adjusted to provide adequate protection for	NSTM 302-3.3.2 GSO 302G

the motor?	
Were switches protected against inadvertent activation?	GSO 070H
Were controllers with multiple power sources properly labeled?	GSO 305C
Were motor foundations properly preserved?	GSO 631J
Was resilient mounted electrical equipment grounded to the ships hull through ground straps?	NSTM 300-4.3.3 NSTM 302-2.4.1.1.1 DOD-STD-2003 MIL-STD-1310
Did electrical rotating machinery have ball check grease fittings (zerk fittings) installed?	NSTM 244-1.7.7
Were coupling, belt, or chain guards effective?	NSTM 302-2.4.1.1 GSO 070H
Were controllers and remote operating stations properly labeled?	GSO 305C
Is clearance provided to permit complete accessibility for operation, maintenance, repair, renewal of fuses, and testing?	GSO 300D

WORKBENCHES

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Was the electrical workbench properly installed, to include: - **Front panel, Side Panel, Back panel and Kneehole Insulation.** - Disconnect Switch properly installed and labeled. - 48-inch ground strap for every 4 feet of workbench. - 5KVA isolation transformer installed. - Safety Placards.	NSTM 300 APPENDIX H GSO 320E GSO 665 GSO 650

(INSPECT) ELECTRICAL SAFETY

COMPONENT/SYSTEM	PROPOSED PROCEDURE
Were flat irons a high-grade commercial type with a three pronged cord?	NSTM 300-2.7.3.6 GSO 640G
Were Ironing Board Stations in berthing space modified to remove spotlight and fill the access hole? Ensure irons are not hardwired.	GSO 640G
Have electronic and electrical shorting probes been modified by installing a nylon screw in the end of the probe and soldering the clip to the conductor?	NAVELEX 0101, 110A FIG 1-3 IAW PMS
Are portable tools/devices not stamped "Double Insulated" or equipped with a three pronged cord?	NSTM 300-2.7.3.3 IAW PMS
Were Hospital grade plugs used on portable equipment?	NSTM 300-2.7.3/2.8
Were light fixtures, guards, and covers securely mounted?	NSTM 300-4.3.3
Were over-sized lamps installed in lighting fixtures?	NSTM 330-2.2.4 NSTM 330-2.2.9
Were light fixtures missing lenses, protective guards, or faceplates?	NSTM 330-2.1.4 NSTM 330-2.2.6
Did diesel module room have adequate lighting?	GSO 331B GSO 332E
Were spray-tight fixtures adequately protected against water intrusion?	NAVSEA 0964-000-2000
Was bunk lighting cable hanging, or not routed through the inside	NAVSEA 0964-000-2000

of bunk stanchions?	
Were plastic-cased bunk light reflectors and toggle switches properly grounded?	NSTM 300-2.2.1.4

(INSPECT) CABLING	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Was PVC cabling installed (new construction only)?	GSO 304D
Were dead-ended cables properly identified/terminated?	NSTM 300-4.6.7 GSO 304E NSTM 300-4.6.9 DOD-STD-2003-1
Were useless or improperly installed cables removed?	NSTM 300-4.6.7.1 GSO 304E
Was cabling properly supported, routed or were nylon wire ties being utilized?	GSO 304E
Were cables pulling out of equipment?	GSO 331E
Were cables improperly spliced?	GSO 304E NSTM 300-4.6.8 DOD-STD-2003-1
Were cables protected against being handholds or being stepped on?	GSO 304E
Was cabling run through beams without the use of chaffing rings?	NSTM 300 TABLE 300-4-4 GSO 304E
Was cabling running through metal partitions equipped with grommets?	GSO 304E NSTM 320-1.6.11
Was cabling on weather decks and engineering spaces deteriorated?	NSTM 300 TABLE 300-4-4 GSO 304C
Were cable stuffing tubes properly assembled ?	NSTM 300-4.6.10.1 NSTM 300 TABLE 300-4-4
	NSTM 320-1.6.11 GSO 304E
Were multiple cables running through one stuffing tube?	GSO 304E NSTM 300 TAB. 300-4-4
Were multi-cable penetrators installed in Flammable Liquid Storerooms?	GSO 304E MIL-STD-1310

(INSPECT) BUS TRANSFER EQUIPMENT	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were ABT's installed for the following: - Emergency Lighting. - IC Switchboard and panels. - Steering power panel. - Pumps associated with the main and auxiliary machinery plant having Low Voltage Release (LVR) control. - Fire pumps. - Fire extinguishing auxiliaries and controls.	NSTM 320-1.3.2 GSO 320D

(INSPECT) BUS TRANSFER EQUIPMENT	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Did ASCO ABT transfer switches have an electrical charge on the metal screw on the manual operator?	NAVSEA FSC SER 03E2/03E2-234
Was the sliding interlock on manual bus transfer switches effective at preventing both breakers from being closed at the same time?	NSTM 300-4.8.4.2
Are feeder circuit breaker megger holes blanked off?	NAVSEA 230319ZNOV 98
Were Normal/Alternate source indicating lights operative?	NSTM 320-2.2.6.4

Were Automatic Bus Transfer Devices operating properly	NSTM 300-4.8.4.2 NSTM 320-1.3.2.1 GSO 300J 320D
(INSPECT) SHIP TELEPHONE SYSTEM	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Was the system unreliable due to unresolved software or hardware deficiencies?	NSTM 430-3 GSO 432
Test battery back-up for telephone system	NSTM 313-2.5 GSO 313J
(INSPECT) MOTORS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were motor foundations properly preserved?	NSTM 300
Was resilient mounted electrical equipment grounded to the ships hull through ground straps?	NSTM 300
Did electrical rotating machinery have ball check grease fittings (zerk fittings) installed?	NSTM 244
Were coupling, belt, or chain guards effective?	GSO 320E
POWER PANELS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Do labels specify the proper information?	GSO 305E
Do Breaker ratings match the circuit label current rating?	GSO 305E
Are multi-phase circuits missing breaker connecting handles?	GSO 324C
Were power panels located inside galley spaces?	GSO 320E
Is clearance provided to permit complete accessibility?	GSO 300D
CASUALTY POWER CABLES	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were cable ends properly terminated?	GSO 304E NSTM 320-3.4.1 DOD-STD-2003
Were cables deteriorated from age, heat, and humidity?	NSTM 079-47.4.2.2.10
Were normally energized power terminals labeled?	NSTM 320-1-2-8-2 GSO 320G
Were racks properly identified as to number/length of cables assigned to the rack?	GSO 305F
Is there a label attached at the end of the cable to indicate the length and stowage rack number?	GSO 305F DOD-STD-2003
Are cable leads properly identified for phase identification?	NSTM 320-1.2.8.2
Were cable ferrules missing or heavily oxidized?	NSTM 079-47.4.2.2.6
Was an improper number/length of cable installed on a cable rack?	NSTM 079-47.5.6.1 GSO 320G
Were wrenches missing from terminals?	NSTM 079-47.4.2.3.3
Were covers installed on power terminals?	NSTM 079-47.4.2.3.4 NSTM 079-47.4.2.3.6 GSO 320G

ELECTRICAL DISTRIBUTION EQUIPMENT	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Was electrical distribution equipment securely mounted?	NSTM 300-4.3.3 GSO 300D
Electrical distribution equipment have loose or missing covers?	NSTM 300-4.3.3
Were control knobs or fasteners missing from electrical equipment?	NSTM 300-4.3.3
Was electrical equipment protected from water intrusion?	NSTM 300-4.4.1 NSTM 300-4.4.5
Is electrical properly mounted or was it suspended solely by electrical cables?	NSTM 300-4.3.3
Were 440 multipurpose outlets properly phased?	NSTM 320-1.4.1
Did Standard Navy Receptacles (SNR) and Multi-Purpose Outlets (MPO) have an interlock switch or was the switch function such that the plug could not be removed from an energized receptacle?	NSTM 320-1.4.1
Were electrical receptacles broken or damaged?	NSTM 300-2.7.6
Were 400HZ AC, 60HZ AC, and DC convenience outlets labeled to prevent equipment being used with the wrong frequency?	GSO 320
SOUND POWERED TELEPHONE SYSTEMS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were Sound Powered Telephone Circuit Amplifiers missing or inoperative?	NSTM 430-3.1
Were any Sound Powered Circuits below 50,000 ohms resistance to ground?	GSO 432I
Were Sound Powered Call Signal Stations (growlers) inoperative, corroded, damaged or missing parts?	NSTM 430
Were Sound Powered Jackboxes improperly labeled, corroded, damaged, or missing parts?	NSTM 430-3.2
(INSPECT) LIGHTING	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were darken ship switches operative and adjusted properly?	NSTM 330-3
Were light fixtures, guards, and covers securely mounted?	NSTM 300-4
Were over-sized lamps installed in lighting fixtures?	NSTM 330-2
Were light fixtures missing lenses, protective guards, or faceplates?	NSTM 330-2
Were spray-tight fixtures adequately protected against water intrusion?	NSTM 300-4
Did diesel module room have adequate lighting?	GSO 331B/332E
Were plastic-cased bunk light reflectors and toggle switches properly grounded?	NSTM 300-2
(INSPECT) BATTERY LOCKERS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Was a Battery Log maintained?	NSTM 313-2

Is there an electrical interlock between exhaust ventilation and battery charger?	5100.19C C0904 NSTM 313
Are Alkaline and Lead Acid Batteries being serviced in the same facility?	5100.19 C0904
Is each locker provided with: - Rubber Gloves and Aprons. - Goggles. - Two battery fillers. - Two battery test sets. - One soda water container.	5100.19 GSO 313F
Does the locker contain an eye wash station and a deluge shower?	NSTM 313-2
Are battery storage racks greater than 12 inches between tiers?	GSO 313F
(INSPECT) BATTERY LOCKERS	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Were battery hold-down clamps provided?	GSO 313F
Are Acids stored in appropriate protective containers?	GSO 313F
Are battery charger plugs and jacks marked NEG. and POS.?	GSO 313F
(INSPECT) MISCELLANEOUS EQUIPMENT	
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**
Is permanently mounted electrical equipment hardwired to the ships electrical system?	NSTM 330-1
Is hardwired electrical equipment permanently mounted?	NSTM 330-1
Was more than 1 multi-purpose power strip connected to one isolated receptacle circuit?	NSTM 300-2.7

Is electrical equipment mounted on non-conducted surfaces properly grounded?	3000 / A-5
Were Surge Protectors of the approved type?	3000 / A-4R
Are portable electric device power cords properly tinned?	3000 / Q-1R
Are permanent-type safety precautions, operating instructions, high voltage warning signs, and resuscitation instructions installed where required?	NSTM –H.5, I-2
Did electrical connection boxes have knockouts pushed in leaving access holes In the side?	NSTM 300-2.
Are non-watertight connection boxes being used in engineering spaces?	GSO 300D
Was rubber matting oil soaked, cracked, punctured, perforated or had imbedded metal or conductive particles?	GSO 634B
Was accommodation ladder lighting of the proper typed? (Not to use dress ship lights attached to gangway handrails)?	NSTM 330-1
Did dress ship lights have broken, missing, or incorrect guards?	NSTM 330-1 3000/ R2
Were dress ship light receptacles labeled “Dress Ship Light Streamers. Not to be used for any other purpose”?	NSTM 330-1-
Were panel switches controlling circuits that are de-energized during darkened ship operation marked DARKENED SHIP?	NSTM 330-1

Had the float charge on the UPS batteries been reduced from 135vdc to 129vdc?	IAW PMS
Was UPS electronic cabinet bottom sealed to prevent water of oil entry from lower level engine room?	GS0 300D/324D NSTM 300-4

ELECTRICAL (EL) POST-UNDERWAY MCM	
	OPEN AND INSPECT AS REQUIRED BY THE INSPECTION
COMPONENT/SYSTEM	**PROPOSED PROCEDURE**

MAIN PROPULSION
PRE-UNDERWAY PHASE
MCM 1

2331	MAIN ENGINE
Component/Sub-Component	Proposed Procedure
Inspect sump level/Lube oil condition	NSTM 262.5 2331/005 R-20, R-21D, R-22D, (9250 oil), R-23, R-24D, R-25D (2104 oil) 2331/008 R-20, R-21D, R-22D, (9250 oil), R-23, R-24D, R-25D (2104 oil)
Intake Plenum	Equip Tech Manual
Intake Dirty Side	Equip Tech Manual
Filters, Gaskets, and Frames	Equip Tech Manual
Start Air Lubricator Oil Level	2331/005 W-4 (MCM 1, 2) 2331/008 M-2 (MCM 3-14)
Coolant Level	EOSS Procedure MEDA
Test Prelube Pump	**EOSS MEDA**
Test Jacket Water High Temp Alarm	**2331/005 A-1 (MCM 1,2)** **2331/008 24M-3R (MCM 3-14)**
Test Lube Oil Filter High DP Alarm	**N/A MCM 1,2** **2331/008 24M-3R**
Test Remote Shutdown	**2331/005 Q-2 (MCM 1,2)** **2331/008 S-8 or S-9 (MCM 3-14)**
Test Local Shutdown	**EOSS MEDA**
Test Low Lube Oil Shutdown	**2331/008 S-8 or S-9 (MCM 3-14)**
Test Low Start Air Alarm	**Local Procedure**
Test Local Pneumatic Start	**EOSS COSM**
Test ASW Emergency Cooling	**EOCC DGEO**
Test Raw Water Alarm	**2331/008 S-7 (MCM 3-14)**
Test Inlet Duct Pressure	**Equip Tech Manual, ISCS**
Test Lube Gallery Low Pressure Shut Down	**EOP**
Check Governor and Fuel Linkage for Binding	US Navy Diesel Engine Inspector Handbook S9233-CJ-HBK-010

2990	LINE SHAFT BEARINGS
Component/Sub-Component	**Proposed Procedure**
Inspect/Sample lube oil	2000/001 R-1
Inspect Sump Drain Valve	NSTM 244
Inspect Seals	NSTM 244-2.6.30
Inspect Thermometers	CRL, CIL
Inspect Lubricator	NSTM 244-3.6, .7; Equip Tech Manual
Inspect Dip Stick	NSTM 244-2.6.7, Equip Tech Manual
Inspect Lock Wires	EDORM 4407
Inspect Bearing Depth Mic Surface	NSTM 244-2.6.9.1.2

2521	CONTROLS
Component/Sub-Component	**Proposed Procedure**
Test EOT Indicator	**EOSS EOT**
Test MCC, EPCC Alarms and Indicators	**EOSS CTAI**
Test ERSP Alarms and Indicators	**EOSS CTAI**
Conduct Console Self-Checks (MCC, EPCC, ERSP)	**EOSS CTAI**
Inspect Torsionometer and verify calibration data	Equip Tech Manual

	MMGTG
Component/Sub-Component	Reference
Test Blow-in door	**MRC 4761/008 A-8**
Test Pedestal bearing high temp	**MRC 4761/008 18M-4 (MCM 1-8), A-1 (MCM 9-14)**
Test fuel oil quick closing valve	**MRC 4761/008 R-1**
Test fuel nozzle pressure transducer	**MRC 4761/008 R-16**
Test high lube oil temperature alarm	**MRC 4761/008 R-18**
Sump level	MGTSS
Inspect wiring and piping systems	MGTSS
Inspect fuel oil strainer shields	MGTSS

2430	STERN TUBE SEALS
Component/Sub-Component	Proposed Procedure
Gauges	2431/803 R-2
Cooling Water Piping	NSTM 505-1.3.3, 1.3.7
Inspect/Shift Cooling Water Strainer/Filter	2400/010 Q-3
Test Cooling Water Low Flow Alarm	**2400/010 S-2**
LP Air Supply	NSTM 244-6.5.6, GSO 244b.8(2)
LP Piping/Hoses/Fittings	NSTM 505-1.3.3, 1.3.7
CO2/N2 Piping/Fitting	Bottle: MRC 2400/010 24M-3 Piping and fittings MRC 2431/803 R-2
Test Inflatable Seal	**2400/010 S-3 (Other than John Crane)** **2400/010 S-4 (John Crane seals)**
Emergency Flax Packing Kit	GSO 244b.8(2), GSO 244 Table 1
Backing Ring	NSTM 244-6.5.2.11

1130	HULL STRUCTURE
Component/Sub-Component	**Proposed Procedure**
Inspect Bilges/Angle Irons	NSTM 100
Inspect Deck Plates	EOSS MLOC, NSTM 100
Inspect Equipment Foundations and resilient mounts	NSTM 100
Inspect Paint and Preservation	GSO
Inspect Pipe Brackets/Hangers	NSTM 505-7.5
Inspect Lighting	NSTM 303

2411	REDUCTION GEARS
Component/Sub-Component	Proposed Procedure
Sump Level	EOSS LOSRG
Lube Oil Condition	MRC 2411/010 R-20, NSTM 262.5
Gear Teeth	NSTM 241-4.4
Lube Oil Spray Pattern	NSTM 241-3.2.5
Casing Interior	NSTM 241-5.2.1, 241-6.1.1
Oil Flow in SFI's	NSTM 241-3.4.5.2
Temperature Gauges	METRL, CRL, CIL
Casing Exterior	NSTM 241-4.2
Foundation	NSTM 090-1.67
Vent Fog Precipitator	NSTM 241-2.3.14
Test Shaft Turning Gear	**EOSS MRTG**
Test Propulsion Control Interlocks	**EOSS CTTC**
Test Clutch and Brake Low Pressure Alarms	**EOCC MLACL**

2620	LUBE OIL SYSTEMS
Component/Sub-Component	**Proposed Procedure**
Purifier - Test Purifier operation - Inspect Motor, Pump - Inspect Heater - Inspect Motor Controller - Inspect Purifier	NSTM 262-3.6.4.3
Test MRG Lube Oil Sequencing	**MRC 2620/009 A-1R**
Inspect Electric Lube Oil Pump	NSTM 503-3.1, -3.5
Inspect Attached Lube Oil Pump	NSTM 503-3.1, -3.5
Test /Inspect Lube Oil Strainer Baskets and Enclosures	**EOP LODS**

2451	CRP/CPP
Component/Sub-Component	**Proposed Procedure**
HOPM - Inspect Flex Hoses - Inspect Piping - Inspect Gages - Inspect Flange Shields	**MIP 5000/ 014; S6430-AE-TED-10** NSTM 505 NSTM 241-3.4.5
Inspect Sump Level	EOSS PHOS
Inspect Oil Condition	MRC 2451/005 R-1W
Verify Calibration between Consoles and OD box	2451/801 R-1
Test Slew Rate, Command Pitch Mismatch Alarm	**2451/801 R-1**
Test Emergency Pitch Pump	**2451/801 R-1**
Attached CRP Pump - Inspect Mechanical Seal	NSTM 503-3.1, -3.5
Electric CRP Pump - Inspect Motor - Inspect Pump - Inspect Mechanical Seal - Inspect Controller	2451/801 R-1, NSTM 503-3.1, -3.5

2610	FUEL OIL SYSTEMS
Component/Sub-Component	**Proposed Procedure**
Purifier - Test Purifier operation - Inspect Motor, Pump - Test Pump, Fuel Oil - Inspect Motor Controller - Inspect Purifier	NSTM 541-9.15, -9.9.3 5410/802 R-18
Inspect Service Pumps	NSTM 503
Test Fuel Oil Service Tanks for Water	**MFR Tech Manual**
Test Service Tank Suction Valves	**EOSS FOAO**
Test Service Tank Recirc Valves	**EOSS FOAO**
Test Quick Closing Valves	**EOCC MFOL**
Filters/Strainers	2610/803 R-22, EOSS
Filters	2610/803 R-22

INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS)	
Component/Sub-Component	Proposed Procedure
Verify operational status of each workstation	
Verify number of required portable data terminals (PDT) and that they are operational	
Verify number of required portable diagnostic aids (PDA) and that they are operational	
Are any critical system errors shown in the system log?	
Ensure data for at least two routes from actual rounds	
Ensure data from Data Acquisition devices is being received as required	
Verify Demand Data is received and processed accurately	
Verify database data is received and processed accurately	
Ensure router connections are operating properly	
Ensure remote demand data and database data are available to be viewed.	
Verify all required system links are available	
Verify all ICAS printers are operational	
Verify picture book is available for vibration checks	
Verify vibration data is being taken per PMS	
Verify vibration disc are installed on all equipment	
Conduct vibration surveys on selected equipment during the full power demonstration	
Inspect all cabinet air filters	
Inspect all ICAS computer equipment	
Inspect computer internal shocks and fans	

MAIN PROPULSION
UNDERWAY PHASE
MCM 1

	TEAM ARRIVAL
Component/Sub-Component	**Proposed Procedure**
Check applicable equipment for correction of deficiencies.	
Tour space, ensure ready for sea.	

	DEMONSTRATIONS
Component/Sub-Component	**Proposed Procedure**
Demonstrate Full Power ahead (1 hour)	PMS/EOSS/POG/9094.1B
Demonstrate Quick Reversal Astern	POG/Full Power Memo/EOSS
Demonstrate Quick Reversal Ahead	POG/Full Power Memo/EOSS
Demonstrate fuel oil purifier (s) operation	EOSS/PMS
Demonstrate purifier (s)emergency stop capability	EOSS/PMS/Tech manual